OROVILLE FACILITIES RELICENSING
FERC PROJECT NO. 2100

SP-T11 EFFECTS OF FUEL LOAD MANAGEMENT AND FIRE PREVENTION ON WILDLIFE AND PLANT COMMUNITIES

DRAFT FINAL REPORT

Area and Treatments Evaluated

\# The study area for this evaluation is the 492 acres of State lands bordering the Kelly Ridge subdivision. Three potential scenarios were modeled using the California Wildlife Habitat Relationship Program.

- õ High severity wildfire over the entire study area (Scenario #1)

- õ Implementation of a 100-foot wide shaded fuelbreak along the project boundary within the study area (Scenario #2)

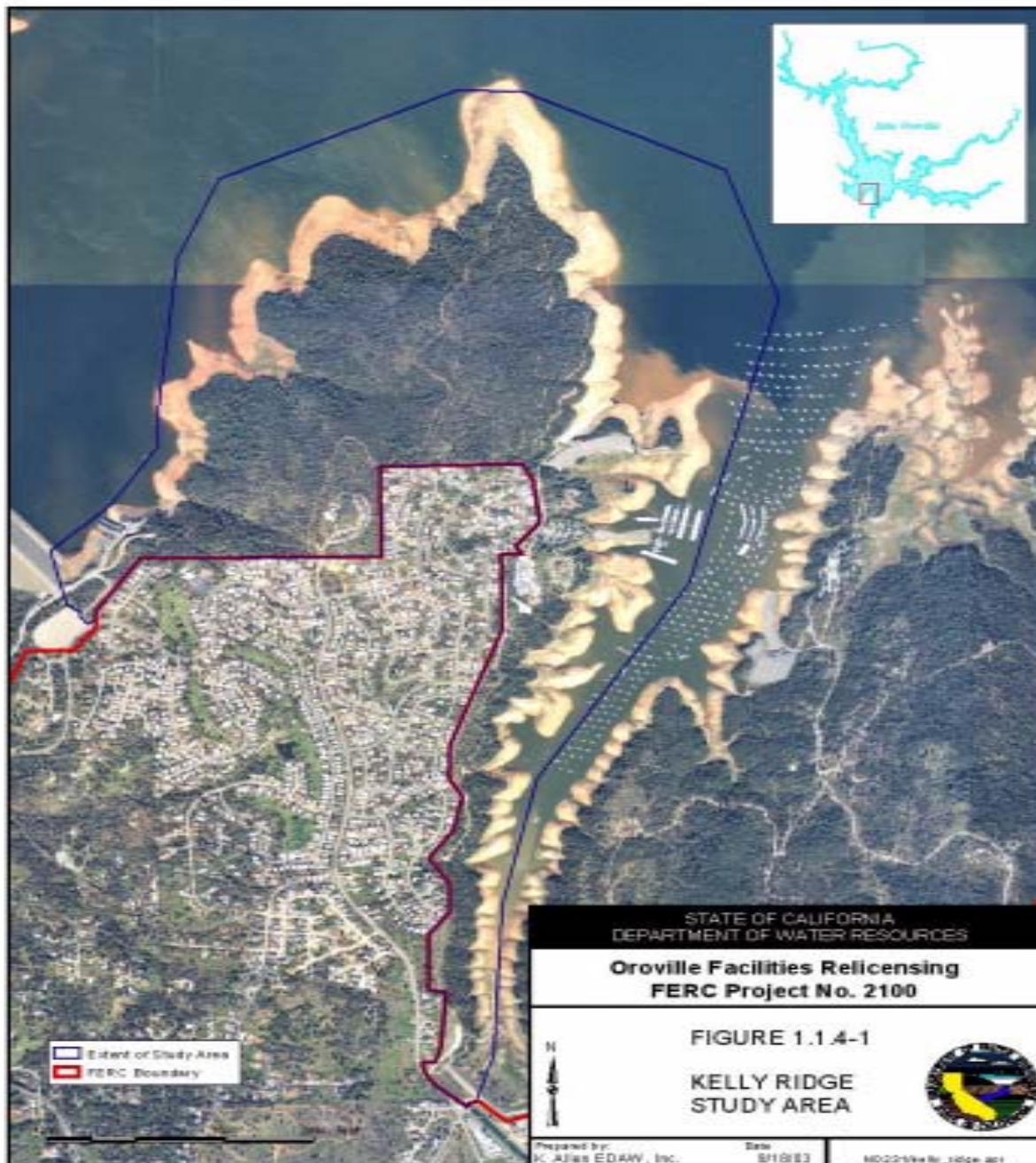- õ Area-wide fuels reduction program within the study area (Scenario #3)

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Oroville Facilities Relicensing
FERC Project No. 2100

FIGURE 1.1.4-1

KELLY RIDGE
STUDY AREA

Extent of Study Area
FERC Boundary

N

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Date:
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Table 1.1.4-1 Major CWHR habitat types present within the study area

Habitat Type	CWHR Code	Acreage
Annual grassland	AGS	6.19
barren	BAR	6.23
Blue oak/foothill pine	BOP	438.55
Freshwater emergent wetland	FEW	0.43
Mixed chaparral	MCH	1.90
Montane hardwood	MHW	3.98
Urban/disturbed	URB	32.58
Valley foothill riparian	VRI	2.12

NEED FOR STUDY

- Several stakeholders have expressed concern related to this land management issue within the FERC relicensing process and one stakeholder sponsored Resource Action has been proposed.

Study Objective

\# The objective of this Study Plan is to assess the potential wildlife and plant community benefits and impacts associated with potential fuels management actions related to the stakeholder sponsored Resource Action.

Study Tools

CWHR Wildlife Habitat mapping
CWHR system/database

CWHR

\# CWHR system is state-of-the-art informational database that describes the management status, distribution, life history and habitat requirements of 675 of California's vertebrate wildlife species

\# CWHR also provides predictive models that serve as a tool to analyze wildlife species responses to habitat alterations. CWHR represents the most extensive compilation of wildlife habitat information in California.

CWHR Methods

All CWHR analyses conducted as part of this evaluation are weighted habitat value comparisons of two situations (baseline and treatment) using a geometric mean.

The "weighting" used was the acres of each seral stage of each habitat type treated under each comparison.

CWHR habitat value comparisons allow species-by-species evaluation of the degree of change in habitat value between current conditions and those that might exist following wildfire or fuels management activities

Current Conditions (Study Baseline)

Baseline Condition-Under existing habitat conditions, CWHR analyses indicate that the habitats present within the study area could provide habitat for 354 species of wildlife including:

õ 14 species of amphibians

õ 246 species of birds

õ 72 species of mammals

õ 22 species of reptiles

CWHR Analyses of Wildfire-Scenario #1

\# High severity fires remove the shrub layer, consume litter, down logs, and snags, and return the vegetative communities to an early successional stage.

\# The existing habitats within the study area were modeled (using CWHR) to reflect a high severity fire.

\# Modeled changes included returning most habitat types to an early and less dense seral stage, removal of buildings, campgrounds, brush piles, fences, herbaceous layer, shrub layer, tree layer, logs, slash, snags, and rotten stumps.

Percentage of affected species in each taxonomic class by type of effect –post high severity wildfire (Scenario #1)

Response	Amphibians	Birds	Mammals	Reptiles
Habitat Created	0.00	0.40	0.00	0.00
Habitat Value Increased	71.43	17.74	34.72	77.27
Habitat Value Unchanged	7.14	33.87	8.33	0.00
Habitat Value Decreased	21.43	8.06	11.11	13.64
Habitat Lost	0.00	39.92	45.83	9.09
Totals	100.00	100.00	100.00	100.00

Scenario #1-Results Summary

\# The immediate post-fire habitat conditions modeled under this scenario were strongly unfavorable to wildlife species richness with complete habitat unsuitability for 134 species (37.7 percent) and decreased habitat suitability for 34 species (9.5 percent).

\# Approximately 27 percent of the species responded favorably to the immediate post-fire conditions.

\# Does not include direct fire-related mortality

Ecological Effects of Fuels Management Options- Scenario #2

\# Scenario #2 involves the creation of a 100-foot wide, 3-mile long, 33 acre shaded fuelbreak along the project boundary (urban interface).

\# Within this 100-foot strip shrubs, small trees, and dead woody materials (slash, snags, and logs) would be removed.

\# Mature overstory trees would remain but canopy closure would be reduced in stands where tree or shrub cover currently exceeds 40 percent.

Percentage of Affected Species in Each Taxonomic Class by Type of Effect under Scenario #2

Response	Amphibians	Birds	Mammals	Reptiles
Habitat Created	0.00	3.66	0.00	0.00
Habitat Value Increased	92.86	43.09	80.56	95.45
Habitat Value Unchanged	7.14	47.56	18.06	4.55
Habitat Value Decreased	0.00	5.69	1.39	0.00
Habitat Lost	0.00	0.00	0.00	0.00
Totals	100.00	100.00	100.00	100.00

Scenario #2-Results Summary

\# Total wildlife species richness would be increased as habitat for nine additional species would be added without the loss of a single species.

\# Over 57 percent of the species would experience at least some incremental increase in habitat suitability, while four percent would experience decreased habitat suitability.

\# The small percentage of total area treated results in relatively minor changes in habitat values.

Ecological Effects of Fuels Management Options-Scenario #3

\# Scenario #3 involves the area-wide fuels reduction within the 490 acre study area.

\# Within this area, shrubs, small trees, and dead woody materials (slash, snags, and logs) would be removed.

\# Mature overstory trees would remain but canopy closure would be reduced in stands where tree or shrub cover currently exceeds 40 percent.

Percentage of Affected Species in Each Taxonomic Class by Type of Effect under Scenario #3

Response	Amphibians	Birds	Mammals	Reptiles
Habitat Created	0.00	0.81	0.00	0.00
Habitat Value Increased	28.57	31.71	36.11	68.18
Habitat Value Unchanged	57.14	59.35	31.94	22.73
Habitat Value Decreased	14.29	6.10	19.44	4.55
Habitat Lost	0.00	2.03	12.50	4.55
Totals	100.00	100.00	100.00	100.00

Scenario #3-Results Summary

\# CWHR predictions indicate that Scenario #3 would result in decreased total wildlife species richness with the loss of habitat for 15 species while gaining only two species.

\# Increased habitat suitability is predicted for 123 species.

\# Decreased habitat suitability is predicted for 32 species, while 182 species would be unaffected by this fuels management strategy.

Summary of total wildlife species response to modeled scenarios

Response	High Severity Wildfire Scenario #1	Shaded Fuelbreak Scenario #2	Area-Wide Fuels Reduction Scenario #3
Habitat Created	1	9	2
Habitat Value Increased	96	198	123
Habitat Value Unchanged	91	132	182
Habitat Value Decreased	34	15	32
Habitat Lost	134	0	15
Total:	356	354	354

Summary

A high severity wildfire within the study area (Scenario #1) has the potential to kill some resident wildlife.

Further, a high severity wildfire would temporarily result in loss of habitat for 134 vertebrate wildlife species, a significant short-term decrease in wildlife species richness

Summary

\# Construction and maintenance of Scenario #2 (shaded fuelbreak) or #3 (area-wide fuels reduction) are unlikely to cause direct wildlife mortality (assuming construction and maintenance activities are scheduled outside the breeding season).

\# Analyses of Scenario #2 (shaded fuelbreak) indicate that this fuels management option offers some substantial opportunities for increased wildlife species richness while minimizing adverse affects. However, the relatively small area treated serves to minimize both the positive and negative benefits to relatively incremental affects.

Summary

Scenario #3 has the potential to adversely impact total wildlife species richness and to decrease or eliminate habitat suitability for 47 species.

Substantial wildlife species richness increases and more significant increases in habitat suitability values could be gained by retaining some fairly large blocks of unmanipulated, dense habitat surrounded by treated areas.

However, this treatment mosaic option would not accrue the same level of fuels reduction benefits that would be realized under implementation of Scenario #3.

Questions?